

REMARKS

Reconsideration of this application in light of the amendments and the following remarks is respectfully requested. Applicant appreciatively thanks the Examiner for the courtesies extended in the January 30, 2007 telephone conference with Applicant's representatives, Pierre R. Yanney and Jennifer Ying.

Status of the Claims

Claims 1-9, 18-27, 30-36 and 39 are pending. Claims 10-17, 28-29, and 40 have been cancelled without prejudice or disclaimer of the subject matter contained therein. Claims 37-38 were cancelled in a previous amendment. No new matter has been added.

Rejection under 35 U.S.C. §102

Claims 1-5, 10-12, 18, 20-21, 26, 28, 30, and 39 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,852,573 to Kennedy. Claims 10-12 and 28 have been cancelled, thus rendering the rejection moot with respect to claims 10-12 and 28.

With respect to the rejection of independent claims 1, 18, and 39, Applicant respectfully traverses the rejection. Independent claims 1, 18 and 39 are directed to methods of sensing the activity of neural tissue or stimulating neural tissue, and recite a step of "placing" or "inserting" an electrode "in a blood vessel proximate to the neural tissue." In the claimed invention, an electrode is deployed within a blood vessel so that the end of the electrode is proximate to the point at which a neural tissue nerve is to be monitored or stimulated. *See*, Specification, page 9, lines 9-12.

Applicant submits that Kennedy neither discloses, nor suggests, “placing” or “inserting” an electrode “in a blood vessel proximate to the neural tissue,” as recited in independent claims 1, 18 and 39. In contrast, Kennedy discloses a neural electrode 10 that is implanted into the brain by boring a hole through the skull. See, Kennedy, col. 3, lines 5-37 and col. 5, line 64 through col. 6, line 42. In particular, Kennedy discloses that in order to implant the electrode 10, a “scalp flap is opened” (Kennedy, col. 6, lines 10-11) and “a stainless steel bone screw is inserted into a drilled hole.” (Kennedy, col. 6, lines 15-16.) Applicant submits that drilling a hole in the skull in order to insert the electrode 10 is **not** the same as, nor equivalent to, “placing” or “inserting” an electrode “in a blood vessel proximate to the neural tissue.”

During the January 30th telephone conversation, the Examiner contended that Kennedy’s disclosure of the “electrode 10 [being] implanted in a part of the body which gives access to neural activity and corresponds to the area of interest for measurement” (Kennedy, col. 5, lines 47-49) taught the claimed feature of “placing an electrode in a blood vessel proximate to the neural tissue,” as recited in claims 1, 18 and 39. The Examiner also cited Kennedy, col. 5, lines 49-59 as disclosing other examples of neural regions of interest, such as the visual cortex or cerebral cortex. However, Applicant respectfully notes that Kennedy points out that the electrode 10 is implanted in “an area of cortex that is relatively **free** of blood vessels.” (Kennedy, col. 6, lines 11-15, *emphasis added*.) Thus, it is clear that when Kennedy’s electrode 10 is implanted in an area of cortex, *e.g.*, visual or cerebral, the area of the cortex has little or no blood vessels. Therefore, Applicant submits that Kennedy’s electrode 10 is not placed “in a blood vessel proximate to the neural tissue,” as recited in independent claims 1, 18 and 39, and actually teaches away from the claimed invention.

As demonstrated above, Applicant submits that Kennedy fails to disclose each and every feature recited in independent claims 1, 18 and 39. Thus, Kennedy does not anticipate the invention recited in independent claims 1, 18 and 39.

Claims 2-5 and 26 depend from claim 1. Claims 20-21 and 30 depend from claim 18. Applicant submits that dependent claims 2-5, 20-21, 26, and 30 are patentable for at least the same reasons discussed above with respect to their respective base claim.

Furthermore, with respect to the rejection of claims 3-4, 20-21, and 39, Applicant respectfully traverses the rejection for an additional reason. Applicant submits that Kennedy fails to disclose or suggest that the electrode is “inserted into the blood vessel at a point upstream of a junction with another blood vessel,” as recited in claim 3, and similarly recited in claims 20 and 39. Likewise, Applicant submits that Kennedy fails to disclose or suggest that the electrode is deployed “to a point downstream of the junction,” as recited in claim 4 and similarly recited in claim 21.

As discussed above, Kennedy merely discloses drilling a hole in the skull in order to insert the implanted electrode 10 into “an area of cortex that is relatively **free** of blood vessels.” (Kennedy, col. 5, line 64 through col. 6, line 42, emphasis added.) Applicant has carefully reviewed the Kennedy reference and has found no mention of inserting an electrode in a blood vessel, let alone “in a blood vessel at a point upstream of a junction with another blood vessel,” as recited in claims 3, 20, and 39, or “to a point downstream of the junction,” as recited in claims 4 and 21.

In view of the above, Applicant submits that Kennedy fails to disclose each and every feature recited in claims 1-5, 18, 20-21, 26, 30, and 39. Therefore, Kennedy fails to anticipate the invention recited in claims 1-5, 18, 20-21, 26, 30, and 39. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. §103

Claims 14-16, 27, 29, and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kennedy in view of U.S. Patent No. 5,843,093 to Howard. Claims 14-16 and 29 have been cancelled, thus rendering this rejection moot with respect to claims 14-16 and 29.

With respect to the rejection of claims 27 and 31, Applicant respectfully traverses the rejection. The Examiner acknowledges that Kennedy fails to disclose a plurality of electrodes. The Examiner relies on Howard as disclosing a catheter 137 having a plurality of microelectrodes 135a which can be placed into specific regions of a patient's brain. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kennedy and Howard to achieve the claimed invention.

Claim 27 depends from claim 1, and claim 31 depends from claim 18. Claims 27 and 31 recite features in addition to those set forth in their respective base claim. Applicant submits that Howard fails to disclose or suggest the features acknowledged by the Examiner to be missing from Howard with respect to claims 1 and 18. Furthermore, as discussed in Applicant's October 5, 2006 Response, Howard fails to disclose or suggest "placing [an] electrode in a . . . blood vessel proximate to the neural tissue," as recited in claims 27 and 31. Accordingly, Applicant submits that the combination of Kennedy and Howard fails to disclose or suggest each and every feature recited in claims 27 and 31. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 6-8, 17, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Kennedy and Howard in view of U.S. Patent Publication No. 2002/0117659 to

Lieber et al. ("Lieber"). Claim 17 has been cancelled, thus rendering this rejection moot with respect to claim 17.

With respect to the rejection of claims 6-8 and 22-24, Applicant respectfully traverses the rejection. The Examiner acknowledges that the combination of Kennedy and Howard fails to disclose nano-electrodes having a nano-wire and a micro-wire. However, the Examiner relies on Lieber as disclosing nano-sensors comprising nano-electrodes 36 connected to nanowire 38 and electrical connections 22. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kennedy, Howard, and Lieber to achieve the claimed invention.

Claims 6-8 depend from claim 1. Claims 22-24 depend from claim 18. Each of the claims 6-8 and 22-24 recite features in addition to those set forth in their respective base claim. Applicant submits that Lieber fails to disclose or suggest at least the features of "placing" or "inserting" an electrode "in a blood vessel proximate to the neural tissue," which were demonstrated to be missing from both Kennedy and Howard with respect to independent claims 1 and 18. Accordingly, Applicant submits that the combination of Kennedy, Howard, and Lieber fails to disclose or suggest each and every feature recited in claims 6-8 and 22-24. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 9 and 25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Kennedy, Howard, and Lieber in view of U.S. Patent No. 5,391,147 to Imram. Applicant respectfully traverses the rejection.

The Examiner acknowledges that the combination of Kennedy, Howard, and Lieber fails to disclose a cup-like end to the nano-electrodes. However, the Examiner relies on Imram as

disclosing a catheter comprising an electrode 221 having a cup shaped end. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kennedy, Howard, Lieber, and Imram to achieve the claimed invention.

Claim 9 depends from claim 1. Claim 25 depends from claim 18. Claims 9 and 25 recite features in addition to those set forth in their respective base claim. Applicant submits that Imram fails to disclose or suggest the features “placing” or “inserting” an electrode “in a blood vessel proximate to the neural tissue,” which were demonstrated to be missing from the combination of Kennedy, Howard, and Lieber with respect to independent claims 1 and 18. Accordingly, Applicant submits that the combination of Kennedy, Howard, Lieber, and Imram fails to disclose or suggest each and every feature recited in claims 9 and 25. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kennedy in view of U.S. Patent No. 6,615,067 to Hoek. Claim 13 has been cancelled, thus rendering this rejection moot with respect to claim 13.

Claims 32-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kennedy in view of U.S. Patent No. 6,374,140 to Rise. Applicant respectfully traverses this rejection.

The Examiner acknowledges that Kennedy fails to disclose the features of claims 32-36. However, the Examiner relies on Rise as disclosing a device having a sensor 20 with an electrode for measuring electrical activity of the brain, a signal processor 30 including a filter 200 for filtering the signal received from the electrode, wherein the signal processor 30 performs extraction and pattern recognition of the signal to determine a brain state. The Examiner contends that it would

have been obvious to one of ordinary skill in the art at the time of the invention to combine Kennedy and Rise to achieve the claimed invention.

Claims 32-36 depend from claim 1, and recite features in addition to those set forth in base claim 1. Applicant submits that Rise fails to disclose or suggest the features of “placing” or “inserting” an electrode “in a blood vessel proximate to the neural tissue,” which were demonstrated to be missing from Kennedy with respect to independent claim 1. Accordingly, Applicant submits that the combination of Kennedy and Rise fails to disclose or suggest each and every feature recited in claims 32-36. Applicant respectfully requests reconsideration and withdrawal of the rejection.

Claim 40 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kennedy in view of U.S. Patent Publication No. 2001/0014820 to Gielen et al. (“Gielen”). Claim 40 has been cancelled, thus rendering this rejection moot with respect to claim 40.

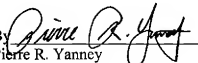
CONCLUSION

Each and every point raised in the Final Office Action dated January 9, 2007 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-9, 18-27, 30-36 and 39 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Dated: March 5, 2007

Respectfully submitted,

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